UNITED STATES PATENT AND TRADEMARK OFFICE

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10/749,482	12/31/2003	Jeffrey S. Cohen	42P17669	1228

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No. 10/749,482	Applicant(s) COHEN, JEFFREY S.
	Examiner Phuong Phu	Art Unit 2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>10 May 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-27</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>1-7 and 17-20</u> is/are allowed.

6)☒ Claim(s) <u>8-16 and 21-27</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>5/10/04</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____ .

DETAILED ACTION

Information Disclosure Statement

1.   Regarding the IDS filed on 5/10/04, reference US Patent number 6/28/1994, issued to

Ushirokawa, is not considered by the examiner because no such the US Patent number issued to

Ushirokawa is found. It appears that "6/28/1994" is a patent date, not a patent number or a

document number of the reference.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claims 10, 14-16, 24 and 27 are rejected under 35 U.S.C. 112, second paragraph, as

being incomplete for omitting essential structural cooperative relationships of elements, such

omission amounting to a gap between the necessary structural connections. See MPEP

§ 2172.01.

-Claim 10 omits functional/structural cooperative relationships of element "multiplexer"

with elements, e.g., "branch indication memory", "memory address logic" and/or "shift register",

previously recited in claim 8, for making the claimed apparatus as a complete operative and

connective device.

-Claim 14 omits functional/structural cooperative relationships of element "Flash

memory" with elements, e.g., "branch indication memory", "memory address logic" and/or "shift

register", previously recited in claim 8, for making the claimed apparatus as a complete operative

and connective device.

-Claim 15 omits functional/structural cooperative relationships of element "GSM

transceiver" with elements, e.g., "branch indication memory", "memory address logic" and/or

"shift register", previously recited in claim 8, for making the claimed apparatus as a complete

operative and connective device.

-Claim 16 omits functional/structural cooperative relationships of element "DRAM

memory" with elements, e.g., "branch indication memory", "memory address logic" and/or "shift

register", previously recited in claim 8, for making the claimed apparatus as a complete operative

and connective device.

-Claims 24 and 27 omit steps showing functional/structural cooperative relationships of

element "DRAM", "Flash memory" or "GSM transceiver" with elements "branch indication

memory", and/or "shift register" for making the claimed method as a complete operative one.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   Claims 8, 9, 11-13, 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by

Araki et al (5,946,361).

-Regarding to claim 8, see figures 1, 4, 5 and 11 and col. 4, lines 1-55, col. 6, line 39 to

col. 7, line 3, col. 9, line 17 to col. 10, line 11, Araki et al discloses an apparatus (see figures 1

or 11) comprising:

a branch indication memory (5) (see figures 1 and 4) to store branch indication information (B) for a state, e.g., ("00000",..., or "11111"), at a section, the branch indication information indicating a branch that leads to the state (see col. 6, lines 39-60, col. 9, lines 22-55);

a memory address logic (inherently included and associated with (5) (see figure 4)) in communication with the branch indication memory (5) to indicate the section;

a selector (comprising (15, 5)), (see figures 1 and 5, col. 6, line 61 to col. 9, lines 13), in communication with the branch indication memory (5) to receive the branch indication information, e.g., "1", outputted from (5), for the state "00111" at the indicated section (see figure 5), the selector to select the branch indication information based on received selection information (outputted from (9) (see figure 5);

a shift register (9) (see figures 1 and 5) in communication with the selector to provide information stored in a plurality of register segments (9) to the selector as the selection information, and to receive and store the selected branch indication information (see col. 7, lines 4-42).

-Regarding to claim 9, Araki et al discloses that the memory address logic comprises a counter (83) (see figure 15, col. 12, lines 22-49).

-Regarding to claim 11, Araki et al discloses that the plurality of register segments of the shift register (9) comprise a number of register segments (=5) that is based on a number of states of a trellis ($N=2^{k-1}=2^5$), the register segments (=5) comprising a five-bit value, e.g., "00111", obtained from five low order bits of the shift register (9) (see figure 5, col. 4, lines 45-55, col. 6, line 64 to col. 7, line 3).

-Regarding to claim 12, as applied to claim 11, Araki et al teaches that the number of register segments is based on a constraint length (k=6).

-Regarding to claim 13, as applied to claims 11 and 12, Araki et al teaches that the number of register segments comprises (k-1=5) segments, where k is the constraint length, and wherein the number of states comprises $2^{k-1}=2^5$ states.

-Regarding to claim 21, as similarly applied to claims 8, 9, 11-13 set forth above and herein incorporated, Araki et al discloses a method comprising:

procedure (5) (see figures 1 and 4) of storing branch indication information in a branch indication memory (5);

procedure (comprising (83) (see figure 15) of selecting a section of the branch indication memory;

procedure (comprising (15, 5)), (see figures 1 and 5, col. 6, line 61 to col. 9, lines 13) of selecting branch indication information for a state at the selected section based on information that is stored in a shift register (9);

procedure (9) of storing the selected branch indication information in the shift register (9); and

procedure (9) of shifting the branch information out of the shift register in order to recover decoded and error corrected information (see col. 4, lines 28-35, col. 8, lines 23-30).

-Regarding to claim 22, Araki et al teaches that selecting the section based on a value of a counter (see col. 12, lines 10-54).

-Regarding to claim 23, Araki et al teaches that selecting the branch indication information for the state comprises using k-1= 6-1= 5 bits of information stored in the shift

register to uniquely select the branch indication information for the state out of a larger set of

branch indication information ($N=2^{k-1}=2^5$) unique states (see figure 5, col. 4, lines 45-55, col. 6,

line 64 to col. 7, line 3).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.   Claims 14-16 and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Araki et al.

-Regarding to claim 14, Araki et al does not teach that the apparatus is implemented in a

portable radio communication device comprising a Flash memory, as claimed.

However, Araki et al teaches that the apparatus is employable in mobile communication

systems for decoding convolutionally coded data (see col. 1, lines 7-12).

Using portable radio communication devices, e.g., lap-top computers, etc., for mobile

communications are well-known in the art, wherein the portable radio communication devices

might comprise Flash memories, and the examiner takes Official Notice.

It would have been obvious for one skilled in the art to implement Araki et al apparatus

for decoding convolutionally coded data in a portable radio communication device used for

mobile communications, wherein the portable radio communication device might comprises a

Flash memory, so that the portable radio communication device would be enhanced with

capabilities of decoding and error-correcting information received by portable radio

communication device during the mobile communications, and providing the decoded information, and such the implementation would become another embodimental application derived from Araki et al invention.

-Regarding to claim 15, Araki et al does not teach that the apparatus is implemented in a cell phone comprising a GSM transceiver, as claimed.

However, Araki et al teaches that the apparatus is employable in mobile communication systems for decoding convolutionally coded data (see col. 1, lines 7-12).

Using cell phones for mobile communications are well-known in the art, wherein the cell phones might comprise transceivers in accordance with the GSM standard, or namely GSM transceivers, and the examiner takes Official Notice.

It would have been obvious for one skilled in the art to implement Araki et al apparatus for decoding convolutionally coded data in a cell phone used for mobile communications, wherein the cell phone might comprises a GSM transceiver, so that the cell phone would be enhanced with capabilities of decoding and error-correcting information received by the cell phone during the mobile communications and providing the decoded information, and such the implementation would become another embodimental application derived from Araki et al invention.

-Regarding to claim 16, Araki et al does not teach that the apparatus is implemented in a computer system comprising a DRAM memory, as claimed.

However, Araki et al teaches that the apparatus is employable in mobile communication systems for decoding convolutionally coded data (see col. 1, lines 7-12).

Using portable radio communication devices, e.g., lap-top computers, etc., for mobile communications are well-known in the art, wherein the portable radio communication devices might comprise DRAM memories, and the examiner takes Official Notice.

It would have been obvious for one skilled in the art to implement Araki et al apparatus for decoding convolutionally coded data in a portable radio communication device, e.g., a lap-top computer, etc., used for mobile communications, wherein the portable radio communication device might comprises a DRAM memory, so that the portable radio communication device would be enhanced with capabilities of decoding and error-correcting information received by the portable radio communication device during the mobile communications and providing the decoded information, and such the implementation would become another embodimental application derived from Araki et al invention.

-Claim 24 is rejected with similar reasons set forth for claims 14-16.

-Regarding to claim 25, as similarly applied to claims 21-23 set forth above and herein incorporated, Araki et al discloses a method comprising:

procedure (5) (see figures 1 and 4) of storing branch indication information in a branch indication memory (5);

procedure (comprising (83) (see figure 15) of selecting a section of the branch indication memory;

procedure (comprising (15, 5)), (see figures 1 and 5, col. 6, line 61 to col. 9, lines 13) of selecting branch indication information for a state at the selected section based on information that is stored in a shift register (9);

procedure (9) of storing the selected branch indication information in the shift register

(9); and

procedure (9) of shifting the branch information out of the shift register in order to

recover decoded and error corrected information (see col. 4, lines 28-35, col. 8, lines 23-30).

Araki et al does not teach a storage medium having stored thereon data representing

sequences of instructions that if executed cause a decoder to performed the method, as claimed.

However, Araki et al teaches that the method is for decoding data in a decoder (see figure

15) comprising a programmable processor (1) wherein the processor (1) can be configurable to

execute software instructions, considered here equivalent with the limitation "data representing

sequences of instructions", to cause the decoder to perform the method (see col. 4, lines 5-7,

col. 7, lines 18-21, col. 8, line 54 to col. 9, line 12, , col. 12, lines 10-63).

Araki et al is silent about a storage medium for storing the software instructions, or

namely, data representing sequences of instructions.

However, using a storage medium in associated with a processor for storing software

instructions in order to retrieve them later to the processor for an execution is well-known in the

art, and the examiner takes Official Notice.

Since in Araki et al, the software instructions needs to be provided to the processor (1)

for the execution, it would have been obvious for one skilled in the art to implement Araki et al

with a storage medium in associated with the processor (1) for storing the software instructions

in order to retrieve them later to the processor for the execution to cause the decoder to perform

the method, as required.

-Regarding to claim 26, as applied to claim 25, Araki et al teaches that the instructions to select the section is configurable to comprise instructions that if executed cause the decoder to: select the section based on a value of a counter (83) (see figure 15, col. 10, line 10 to col. 13, line 10).

-Claim 27, as applied to claim 25, is further rejected with similar reasons set forth for claims 14-16 and 24.

Allowable Subject Matter

8. Claims 1-7 and 17-20 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong Phu whose telephone number is 571-272-3009. The examiner can normally be reached on M-F (8:00 AM - 4:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Phuong Phu
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06/13/07

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